

THREE NEW PREDACIOUS NEMATODES

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Three new species of predacious nematodes from various localities, one representing a new genus, were selected from the collection of the Division of Nematology, Salt Lake City, Utah, station. They are herein described as *Bathyodontus cylindricus* new genus, new species, *Discolaimium pseudoporum* new species, and *Discolaimium gigas* new species.

All drawings and measurements were made on specimens killed by gradual heat, fixed in formal-alcohol-acetic acid solution and mounted in glycerine.

BATHYODONTUS Fielding, new genus

Nygalaiminae? Predacious. Body cylindrical from the middle of the neck to a short distance in front of the anus. Lips amalgamated, practically continuous with the neck contour, bearing an inner circlet of six and an outer circlet of ten papillae. The conspicuous, granular lateral cords are about $1/3$ the body width except at the extremities. Amphids small, cup shaped. A single ventral tooth is located at the base of the cylindroid pharynx. Esophageal glands apparently five. Cardia large, irregularly shaped. Intestine thick walled, with fine granules. Vulva a transverse slit, located posterior to the middle of the body. Vagina small, refractive. Ovaries two, symmetrical, reflexed. Tail hemispheroid, bearing an axial pore, indicating a spinneret-like function.

TYPE SPECIES: *Bathyodontus cylindricus* n. sp.

TYPE LOCALITY: Alfalfa field, Westmoreland, California.

The genus *Bathyodontus* is distinctive because of the ventral tooth located at the base of the pharynx, and the axial terminal pore. It appears to be related to the genus *Oionchus* Cobb, 1913 (Jour. Washington Acad. Sci. 3(16): 432-444), which it resembles in the cylindroid body and esophagus, and the axial terminal pore.

BATHYODONTUS CYLINDRICUS Fielding, n.g., n.sp. Fig. 1, A-H

♀: 1.1 mm; $a = 23$; $b = 3.4$; $c = 47$; $V = 7.557$.

Body cylindrical from the middle of the neck to a short distance in front of the anus. The conspicuous granular lateral cords are about

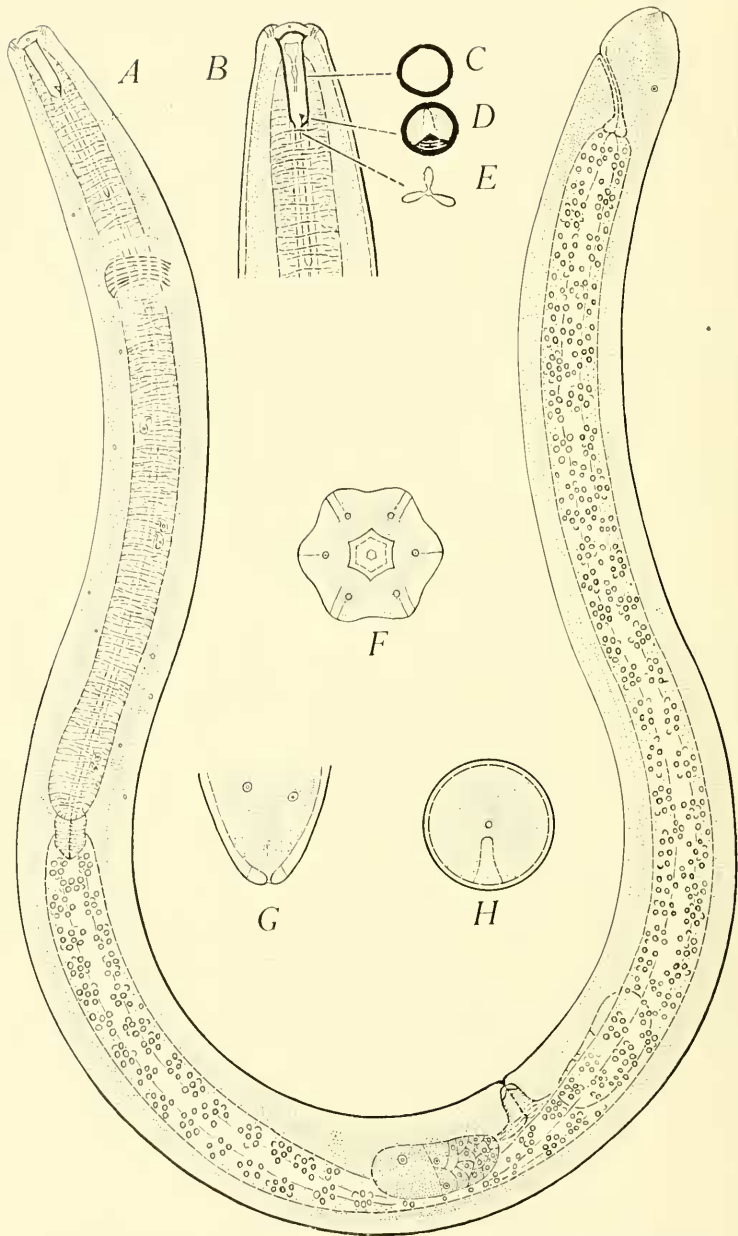


Fig. 1. *Bathyodontus cylindricus* n.g. n.sp. A—Female; $\times 330$. B—Anterior portion of female; $\times 500$. C—Cross section through prorhabdions; $\times 1330$. D—Cross section through tooth; $\times 1330$. E—Cross section through anterior esophagus; $\times 1330$. F—face view; $\times 1330$. G—Ventral view of posterior portion of female; $\times 500$. H—Tail end-view; $\times 1175$.

1/3 as wide as the body except at the extremities. Tail hemispheroid, bearing an axial terminal pore, with a valve and a large gland anterior to it on each side of the body. A dorso-ventral view, or tail end-view shows these glands to fill almost the entire tail cavity (Figure 1-G, H). Caudal pores arranged as shown (Figure 1-A, G). Lips almost continuous with the neck contour, bearing an inner circle of six and an outer circle of ten papillae. Amphids small, cup shaped, about 1/4 as wide as lip region. The single ventral tooth is located at the base of the cylindroid pharynx. Esophagus cylindroid, bearing the usual five esophageal gland nuclei arranged as illustrated (Figure 1-A). Cardia large, irregularly shaped. Each cell of the thick walled intestine contains a group of fine granules. No prerectum was observed, although one specimen had a slight constriction in the intestine about four anal body diameters anterior to the rectum which may have indicated the presence of a prerectum-like portion. Rectum equal to anal body diameter. Vulva a transverse slit. Vagina refractive, extending almost 1/2 the way across the body. Ovaries symmetrical, reflexed 1/2 the way back to the vulva. All specimens were young females and no eggs were observed in the uteri. Body straight when killed by gradual heat. This species was exceedingly active when observed alive.¹

HABITAT: Eight females collected from soil in an alfalfa field, Westmoreland, California, by Gerald Thorne, 1942.

DISCOLAIMIUM PSEUDOPORUM Fielding, n. sp. Fig. 2, A-F

♀: 1.7 mm; a = 35; b = 4.6-5.0; c = 80-100; V = $16\ 48\ 16$.

Body about cylindrical from the middle of the neck to a short distance in front of the anus. Lateral organs number from 45-55 on each side of the body and are irregular in size and arrangement, and from each a connection extends through the cuticle to a pore. A cross section shows these organs to extend far into the body cavity (Fig. 2, F). Tail hemispheroid. From a lateral view there appears to be an axial terminal pore with a valve-like structure and several glands arranged anterior to it. However, from a tail end-view there is no visible external opening through the cuticle, which indicates that this structure is rudimentary. Caudal pores arranged as shown (Fig. 2 B, D). Lip region 1/2 as wide as base of neck, set off by a constriction, bearing an inner circle of six and an outer circle of ten papillae. Amphids stirrup shaped, almost 1/3 as wide as lip region. Spear about 2/3 as long as lip region width, the aperture occupying 1/2 its length. Guid-

(1) Personal communication to the writer by Gerald Thorne.

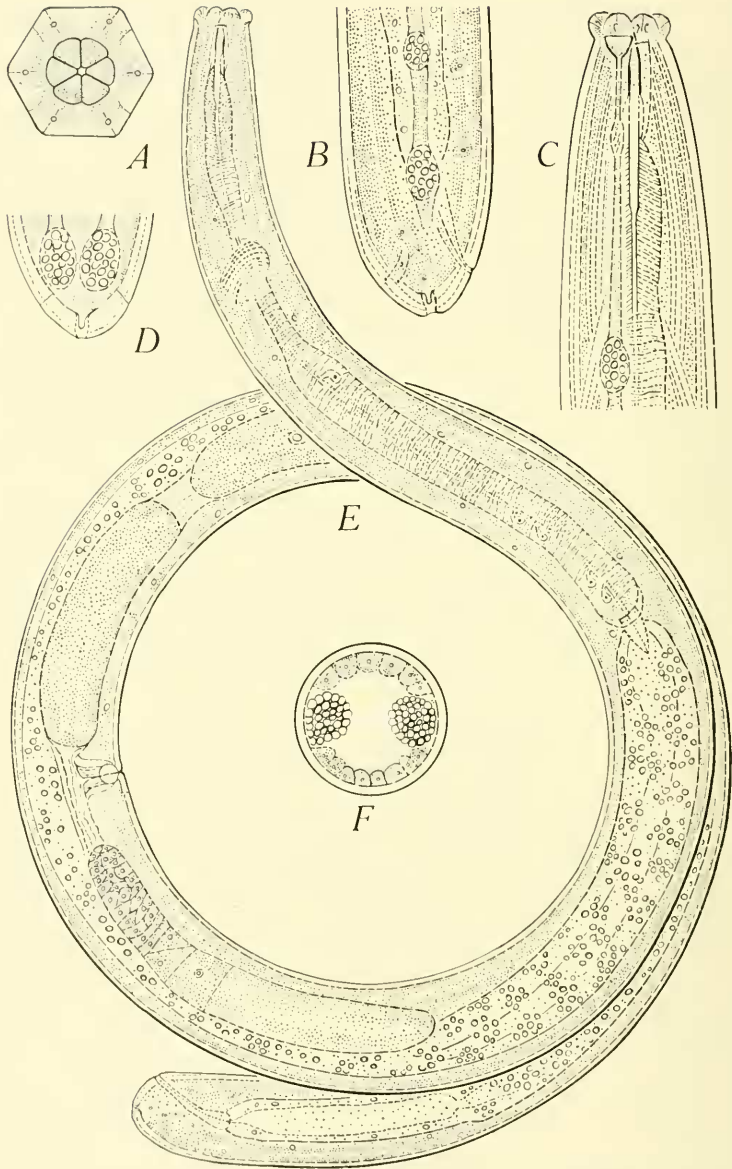


Fig. 2. *Discolaimium pseudoporum*. A—Face view; $\times 1060$. B—Posterior portion of female; $\times 530$. C—Anterior portion of female; $\times 530$. D—Dorsoventral view of tail; $\times 530$. E—Female; $\times 265$. F—Cross section anterior to anus; $\times 700$.

ing ring a muscular sheath. Esophagus irregular in width anteriorly, with strong radial musculature, narrowing as it passes through the nerve ring, then abruptly expanded in the posterior $3/5$. The usual five esophageal gland nuclei are present, arranged as illustrated (Fig. 2, E). A membrane-like sheath surrounds the base of the esophagus. Cardia pineapple shaped. Each cell of the thick walled intestine contains a group of large granules. Prerectum length equal to three times the anal body diameter. Rectum length equal to anal body diameter. Vulva a transverse slit. Vagina refractive, extending more than $1/3$ across the body. Ovaries symmetrical, reflexed $1/2$ the way back to the vulva when not displaced by developing ova. Eggs $2\frac{1}{2}$ times as long and $2/3$ as wide as body diameter.

When killed by gradual heat, this species twists in the anterior portion so that the head is seen in a submedian view.

DIAGNOSIS: *Discolaimium* with the above measurements and general description. Distinctive because of the axial terminal pore-like structure, and the pronounced musculature of the anterior esophagus. It is tentatively placed in the genus *Discolaimium*, although it resembles the genus *Discolaimus* in the musculature of the anterior portion of the esophagus. It probably represents the group from which these two genera were evolved.

HABITAT: Six females collected from soil about the roots of corn, Sanford, Florida, by Dr. J. R. Christie, 1949.

DISCOLAIMIUM GIGAS Fielding, n.sp.

♀: 2.2 mm; $a = 42$; $b = 4$; $c = 45$; $V = 10\ 42\ 10$.

Body almost cylindrical from the middle of the neck to a short distance in front of the anus. Cuticle with easily visible transverse striae. Lateral glandular organs number from 45-60 on each side of the body, are irregular in size and arrangement; from each a connection extends through the cuticle to a pore. Tail conoid to a rounded terminus. Four caudal pores arranged as illustrated, and in addition there appear to be a single ventral and two pairs of sub-dorsal innervations (Fig. 3, C). Lip region $1/2$ as wide as base of neck, set off by a constriction, bearing an inner circle of six and an outer circle of ten papillae. Amphids stirrup shaped, $1/2$ as wide as lip region. Spear length equal to lip region width, the aperture occupying $1/2$ its length. Guiding ring obscure, muscular, extensible as spear is thrust out. Esophagus beginning as an ellipsoid bulb surrounding the junction of the spear extensions. The lumen of the slender anterior portion of the

esophagus is unusually wide but narrow where it joins the abruptly enlarged basal portion (Fig. 3, B). A membrane-like sheath surrounds the base of the esophagus. Cardia hemispheroid. Intestine apparently 12 cells in circumference, the granules fine and colorless. Prerectum and rectum lengths each equal to anal body diameter. Vulva a transverse slit; vagina extending almost $1/2$ across the body. Ovaries symmetrical, reflexed $3/5$ the distance back to the vulva. All specimens were young females and no eggs were present in the uteri.

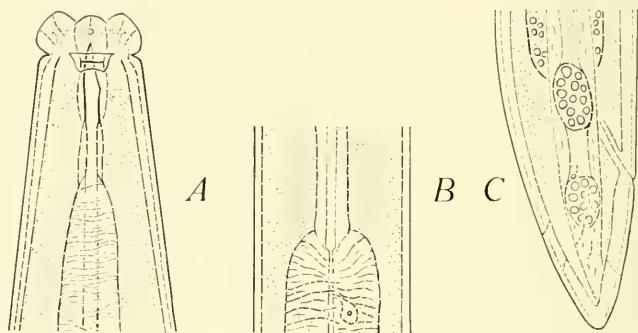


Fig. 3. *Discolaimium gigas*. A—Anterior portion of female; $\times 500$. B—Esophagus at expansion; $\times 500$. C—Posterior portion of female; $\times 500$.

DIAGNOSIS: *Discolaimium* with the above measurements and general description. Distinctive because of its large size, wide lumen of the anterior esophagus, and the caudal pores and innervations.

HABITAT: Fifteen females collected from cultivated soil, Planada, California, by Gerald Thorne, 1942.

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